

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application of Robert L. Popp et al. Art Unit 3761
Serial No. 10/038,818
Filed December 31, 2001
Confirmation No. 9058
For MECHANICAL FASTENING SYSTEM FOR AN ABSORBENT ARTICLE
Examiner Karin M. Reichle

November 14, 2006

SUPPLEMENTAL AMENDED APPEAL BRIEF

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This is an appeal from the final rejection of the claims of the above-identified application as set forth in the final Office action dated July 21, 2005. A Notice of Appeal was filed on August 30, 2005.

This Supplemental Amended Appeal Brief is being submitted in response to the Notification of Non-Complaint Appeal Brief dated November 2, 2006.

I. REAL PARTY IN INTEREST

The real party in interest in connection with the present appeal is Kimberly-Clark Worldwide, Inc. of 401 N. Lake Street, Neenah, Wisconsin 54957-0349, a corporation of the state of Delaware, owner of a 100 percent interest in the pending application.

II. RELATED APPEALS AND INTERFERENCES

Appellant is unaware of any pending appeals or interferences which may be related to, directly affect or be directly affected by, or have a bearing on, the Board's decision in the pending appeal.

III. STATUS OF CLAIMS

Claims 3, 19-23, and 25 are pending in the application. All of the pending claims stand rejected. Claims 1, 2, 4-18, and 24 were previously cancelled. A clean copy of the pending claims that are being appealed appears in the Claims Appendix of this Brief.

IV. STATUS OF AMENDMENTS

No amendments have been filed after the final rejection.

V. SUMMARY OF CLAIMED SUBJECT MATTER

The following summary correlates claim elements to specific embodiments described in the application specification, but does not in any manner limit claim interpretation. Rather, the following summary is provided only to facilitate the Board's understanding of the subject matter of this appeal.

Claim 19 is directed to a mechanical fastening system 80 for an article 20. See page 21, lines 25 and 26, and Figs. 1-5. The fastening system 80 generally comprises a loop component 84, 85 mountable on the article 20 and capable of elastic stretching in at least two directions. See page 22, lines 4-7, Figs. 1-5. The loop component 84, 85 is capable of being elastically stretched in at least one of the directions at least about 2.0 times a relaxed length of the loop component. See page 35, line 26 through page 36, line 15. The loop component 84, 85 comprises a neck-stretched non-woven material and an elastic substrate. See page 26, lines 22-25, page 28, lines 27-28, and Fig. 6. The elastic substrate is elastically stretchable in at least two directions. See page 27, lines 6-8. The non-woven material is attached directly to the elastic substrate. See page 34, lines 11-13 and Fig. 7.

A hook component 82, 83 is mountable on the article 20 and capable of fastening engagement with the loop component 84, 85 to secure the article in a fastened configuration. See page 21, lines 25-29, page 22, lines 4-7, and Figs. 1 and 4. When the hook component 82, 83 is juxtaposed and engaged with at least a portion of the loop component 84, 85, the loop component is stretchable during limited movement of the loop component relative to the hook component. See page 26, line 22 through page 27, line 1.

VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

A. Appellant appeals the rejection of claims 19 and 25 under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 5,910,136 (Hetzler).

B. Appellant further appeals the rejection of claims 19 and 25 under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 5,883,028 (Morman '028), and thereby U.S. Patent Nos. 5,116,662 (Morman '662) and 5,114,781 (Morman '781), in view of Hetzler.

VII. ARGUMENT

A. Claims 19 and 25 are unanticipated by Hetzler.

Claim 19

Claim 19 is directed to a hook and loop mechanical fastening system for an article in which the loop component of the fastening system is mountable on the article and is capable of elastic stretching (e.g., elongating upon application of an elongating force and subsequent retraction upon removal or reduction of the elongating force) in at least two directions (e.g., a machine direction and a cross-machine direction of the loop component). In at least one of the

directions, the loop component is capable of stretching at least to 2.0 times its relaxed length. The loop component is constructed of a neck-stretched non-woven material attached directly to an elastic substrate that is elastically stretchable in at least two directions. The resulting loop component is also capable of elastic stretching in at least two directions. Moreover as claimed (a mechanical fastening system), the loop component and hook component can be mated for secure engagement.

The stretch in the loop material advantageously allows flexibility so that as the loop material is stretched during use, only some of the points of engagement between the hooks and loops are separated when the product is stressed. Many of hooks that are disengaged from the loops are able to reattach to a different spot in the loop material as it contracts. This significantly reduces "pop opens" (abrupt disengagement of the fasteners) over conventional hook-and-loop fasteners, which tend to separate all at once.

This is a particularly important feature in disposable garments and especially, in training pants, which are typically used by active toddlers. Toddlers are capable of many activities (e.g., running, jumping, squatting, bending) that stress the fastener system. In prior art fasteners, these stresses sometime resulted in the hook and loops fastening becoming disengaged, which compromises the effectiveness of the training pants. In other words, prior art training pants were more prone to leaking as a result of fastener system failure. The claimed fastening system is able to withstand greater stresses than the prior art fastening systems and thus, is less likely to leak. As can be appreciated, this is a substantial improvement over the prior art.

Specifically, claim 19 recites a mechanical fastening system for an article wherein the mechanical fastening system comprises:

a) a loop component mountable on the article and capable of elastic stretching in at least two directions, said loop component being capable of being elastically stretched in at least one of the directions at least about 2.0 times a relaxed length of the loop component, said loop component comprising a neck-stretched non-woven material and an elastic substrate, said elastic substrate being elastically stretchable in at least two directions, said non-woven material being attached directly to the elastic substrate; and

b) a hook component mountable on the article and capable of fastening engagement with the loop component to secure the article in a fastened configuration;

c) whereby when the hook component is juxtaposed and engaged with at least a portion of the loop component, the loop component is stretchable during limited movement of the loop component relative to the hook component.

Claim 19 is submitted to be patentable over the references of record, and in particular U.S. Patent No. 5,910,136 (Hetzler). Hetzler fails to show or suggest a mechanical fastening system including a loop component that is mountable on an article, capable of elastic stretching in at least two directions, and is elastically stretchable to at least 2.0 times a relaxed length in at least one of the directions, and is constructed of a neck-stretched non-woven material attached directly to an elastic substrate.

Hetzler pertains to making a breathable, microporous film and laminate incorporating such a film. The patent has nothing to do with fastening systems generally or hook and loop fasteners in particular. References to fastening systems

and hook and loop materials are made only in passing and, as will be explained more fully hereinafter, do not disclose or suggest a loop component that is capable of elastic stretching in at least two directions, and capable of stretching elastically to at least two times its relaxed length, as required by claim 19.

More specifically, Hetzler discloses oriented polymeric microporous (e.g., breathable) films with flexible polyolefins. At column 3, line 47 through column 7, line 3, Hetzler states that the "flexible polyolefins" can be used to initially form the film, and further disclose that the polyolefin resin may optionally include an elastomeric thermoplastic material. Flexible polyolefins may in some forms retain a measure of elasticity, but they are not nearly as elastic as the claimed loop component. The flexible polyolefins of Hetzler would almost certainly break if stretched to a length twice a relaxed length (as required by claim 19).

Moreover, there is a complete absence of any specific disclosure in Hetzler of a loop component that can be stretched in two directions. The film, or a breathable laminate constructed from the film, is disclosed as being useful in absorbent articles such as a diaper (80) as shown in Fig. 3, including using a non-woven portion of a laminate constructed from the film as the loop portion of a hook and loop combination. Hetzler discusses several different laminates that can be made, but never specifically describe a loop component stretchable in two directions. To anticipate a claim, a particular reference must clearly and unequivocally disclose the claimed invention or direct those skilled in the art to the invention without picking, choosing and combining

various disclosures not directly related to each other by the cited reference. *In re Arkley*, 455 F.2d 586, 587 (CCPA 1972).

In *In re Arkley*, the cited reference disclosed the precursors to the claimed compound, but did not disclose the compound itself. However, the court found nothing in the reference that clearly and unequivocally led one of ordinary skill in the art to take the steps needed to form the compound from the precursors. Accordingly, the claim was not anticipated by the cited reference.

As in *In re Arkley*, there is no explicit disclosure in Hetzler of a loop component that is extensible in two directions and elastically stretchable in at least one of the two directions two times its relaxed length. The rejection is based on picking and choosing among disclosures that relate to the elastic substrate and disclosures that relate to various embodiments. Although use of one of the laminates as a loop component is mentioned in passing (col. 11, l. 22 - col. 12, l. 2), there is absolutely no indication that this particular laminate is capable of stretching in two directions. There is no disclosure that in the loop material version that the loop material can be elastically stretched to twice its relaxed length in at least one of the directions. There is no disclosure that the loop material has as one of its elements a neck-stretched loop material. To make such a rejection, the Examiner must pick and choose among the various disclosures in Hetzler (which is directed to producing breathable material, not a stretchable loop component) to reject claim 19. This stands in clear contradiction to *In re Arkley*.

None of the passages relied upon by the Office in paragraph 3 of the final Office action disclose the film and/or laminate as being elastically stretchable in multiple directions in its final (e.g., in use) form. The only passage

in which the laminate is referred to as being stretchable at all is at column 9, lines 26-36. This does not disclose that if the support layer attached to the elastic substrate is suitable for use as a loop material that bi-directional stretching can be achieved. Further, there is no disclosure that if such stretching could be achieved, it would be elastic (i.e., able to recover at least 50% of the amount by which the material is stretched) if stretched to two times its relaxed length.

The Examiner, as set forth in the last sentence of paragraph 3 of the Office action, relies on the teachings at column 7, lines 20-36 of Hetzler as disclosing a loop component that is elastically stretchable to at least twice a relaxed length. Hetzler defines "elastic" as any material that is elongatable to a length at least about 150 percent of its unbiased length. In other words, Hetzler defines "elastic" as any material that can be stretched at least about 1.5 times a relaxed length. Using the actual example provided in Hetzler (rather than a stated range not supported by examples), a 1-inch sample of elastic material can be stretched to 1.5-inches, which is 1.5 times the original, relaxed length of 1-inch and not 2.0 times as recited in claim 19. Thus, Hetzler does not disclose or suggest an elastic material that is elastically stretchable to at least 2.0 times its relaxed length.

As explained on page 35, line 26 through page 36, line 15 of the present application, one embodiment of the present invention can be stretched to a length about 200 percent of its initial, relaxed length. In the example provided in the application, the composite material (i.e., non-woven material and elastic substrate) has a relaxed length of 110 cm and is stretchable in the machine direction to 220 cm. Thus, the

stretched length is 2.0 times the relaxed length. Claim 19 was previously amended to state "2.0" rather than "two" to emphasize the difference between 1.5 times the relaxed length in the prior art, and 2.0 times the relaxed length in the claimed invention. The stretch in the loop material allows flexibility so that as the loop material is stretched during use, only some of the points of engagement between the hooks and loops are separated when the product is stressed, and then some of the hooks are able to reattach to a different spot in the loop material as it contracts. This reduces "pop opens" as described above. Hetzler fails to disclose or suggest such a feature or the advantages of having such a feature.

For these reasons, claim 19 is unanticipated by and patentable over Hetzler.

Claims 3, 20-23, and 25 depend directly or indirectly from claim 19 and are submitted to be unanticipated by and patentable over the Hetzler for at least the same reasons.

Claim 25

Claim 25 depends from 19 and further requires the loop component be able to elastically stretch in at least one of the two directions 2.5 times its relaxed length. As explained on page 36, line 20 through page 37, line 26 of the present application, another embodiment of the present invention can be stretched to a width about 250 percent of its initial, relaxed width. In the example provided in the application, the composite material (i.e., non-woven material and elastic substrate) has a relaxed width of about 100 cm and is stretchable to a width of about 250 cm. Thus, the stretched width is 2.5 times the relaxed width. As mentioned above, the stretch in the loop material allows flexibility so that as the loop material is stretched during use, only some of the points

of engagement between the hooks and loops are separated when the product is stressed, and then some of the hooks are able to reattach to a different spot in the loop material as it contracts. This reduces "pop opens."

Hetzler, for substantially the same reasons as set forth above with respect to claim 19, fails to show or suggest this additional feature. Accordingly, claim 25 is submitted as patentable over Hetzler for this additional reason.

B. Claims 19 and 25 are patentable over U.S. Patent Nos. 5,883,028 (Morman '028), and thereby 5,116,662 (Morman '662) and 5,114,781 (Morman '781), in view of Hetzler.

Claim 19

Appellant disagrees with the Office's position that it would have been obvious in view of Hetzler to use the breathable elastic film/non-woven laminate of U.S. Patent No. 5,883,028 (Morman '028) to form a loop component of a mechanical fastening system for an article. Accordingly, claim 19 is submitted as patentable over the combination of Morman '028 with Hetzler et al.

In determining whether a case of *prima facie* obviousness exists, it is necessary to ascertain whether the prior art teachings would appear to be sufficient to one of ordinary skill in the art to suggest making the claimed substitution or other modification. Obviousness can only be established by modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references or in the knowledge generally available to one of ordinary skill in the art. M.P.E.P. §2143.01 citing *In re Kotzab*, 55 USPQ2d 1313, 1317 (Fed. Cir. 2000). The mere fact that a prior art reference may be modified to obtain the claimed invention does not make the claimed invention obvious if there is no

suggestion or motivation in the reference to make the modification. *In re Mills*, 916 F.2d 680, 682, 16 U.S.P.Q.2d 1430, 1432 (Fed. Cir. 1990). The prior art must provide one of ordinary skill the motivation to make the proposed modifications. *In re Lalu*, 747 F.2d 703, 705, 223 USPQ 1257, 1258 (Fed. Cir. 1984). Such motivation is clearly lacking in this case.

The essence of claim 19 is that by providing a loop component capable of elastic stretching in at least two directions. The stretch in the loop material allows flexibility so that as the loop material is stretched during use, only some of the points of engagement between the hooks and loops are separated when the product is stressed, and then some of the hooks are able to reattach to a different spot in the loop material as it contracts. This reduces "pop opens." See, e.g., page 26, line 23 through page 27, line 1 of the pending application.

Both Morman '028 and Hetzler pertain to breathable (microporous) laminates and have nothing to do with mechanical fastening systems. They do not disclose loop components usable with hook components to form a fastening system, in which the loop components are stretchable in two directions. Because the cited references are not directed to fastening systems, they also fail to recognize any advantage associated with a loop component stretchable in two directions and thus, provide no suggestion for combination to produce a stretchable loop component.

Morman '028 discloses a breathable laminate comprising a non-woven web secured to an elastic film. The breathability of the laminate renders it useful as an outer cover for diapers and other personal care products, and surgical gowns. See column 1, lines 49-53 of Morman '028. There is no

disclosure or teaching found in Morman '028 of forming a loop component of a mechanical fastening system that is elastically stretchable in at least two directions. Morman '662 and Morman '781 are incorporated by reference into Morman '028 for disclosing processes for making a multidirectional stretchable laminate from an elastic film and a necked nonwoven web. See col. 12, lines 12-16. Morman '662 and Morman '781 also fail to disclose or teach forming a loop component of a mechanical fastening system that is elastically stretchable in at least two directions.

Hetzler discloses using the inelastic laminate disclosed therein as a loop component. However, there is no suggestion for making the inelastic loop component elastically stretchable in two directions, particularly where elasticity is maintained for stretching up to twice a relaxed length in at least one of the directions. Hetzler does not recognize the desirability or advantage of any such construction.

There is no suggestion or teaching found in either Morman '028 or Hetzler that would motivate one skilled in the art to replace the loop fastener of Hetzler with the laminate disclosed by Morman '028. That such a replacement can be made does not render the replacement obvious. Rather, there must be some motivation found in the references to make such a replacement. None is provided by either of the references. That is, neither of the references teaches the desire to provide a multi-direction elastically stretchable loop component to thereby increase engagement with the hook component. As stated previously, these references are concerned with producing breathable (microporous) laminates, not hook and loop fastening systems. Such motivation can only be improperly gleaned from the present application.

In addition, claim 19 requires that the loop component is capable of being elastically stretched in at least one of the directions at least about 2.0 times a relaxed length of the loop component. As mentioned above, Hetzler defines "elastic" as any material that can be stretched at least about 1.5 times a relaxed length. Morman '028 defines "elastic" at column 2, lines 58-67 (as cited by the Examiner) as any material that is elongatable to a length at least about 160 percent of its unbiased length. In other words, Morman '028 defines "elastic" as any material that can be stretched at least about 1.6 times a relaxed length. Using the actual example provided in Morman '028 (rather than a stated range not supported by examples), a 1-inch sample of elastic material can be stretched to 1.6-inches, which is 1.6 times the original, relaxed length of 1-inch and not 2.0 times as recited claim 19. Thus, Morman '028 and Hetzler, whether considered alone or in combination, fail to teach or suggest a loop component that is able to elastically stretch 2.0 times its relaxed length.

For these reasons, claim 19 is submitted to be non-obvious and patentable over the references of record.

Claims 3 and 20-23 and 25 depend directly or indirectly from claim 19 and are submitted to be nonobvious and patentable over the references of record for the same reasons as claim 19.

Claim 25

Claim 25 depends from claim 19 and further requires that the loop component be able to elastically stretch in at least one of the two directions 2.5 times its relaxed length. As mentioned above, the stretch in the loop material reduces "pop opens" (abrupt disengagement of the fasteners) over

conventional hook-and-loop fasteners. Hetzler, Morman '028 and the other references of record fail to show or suggest this additional feature. Accordingly, claim 25 is submitted as patentable for this additional reason.

VIII. CONCLUSION

For all of the above reasons, appellant respectfully requests the Office's rejections be reversed and that claims 3, 19-20, and 25 be allowed.

While no fee is believed due at this time, the Commissioner is authorized to charge any fee due to Deposit Account No. 19-1345 in the name of Senniger, Powers.

Respectfully submitted,



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KFJ/PEB/bcw

CLAIMS APPENDIX

19. A mechanical fastening system for an article,
comprising:

a loop component mountable on the article and capable of elastic stretching in at least two directions, said loop component being capable of being elastically stretched in at least one of the directions at least about 2.0 times a relaxed length of the loop component, said loop component comprising a neck-stretched non-woven material and an elastic substrate, said elastic substrate being elastically stretchable in at least two directions, said non-woven material being attached directly to the elastic substrate; and

a hook component mountable on the article and capable of fastening engagement with the loop component to secure the article in a fastened configuration;

whereby when the hook component is juxtaposed and engaged with at least a portion of the loop component, the loop component is stretchable during limited movement of the loop component relative to the hook component.

25. A mechanical fastening system as set forth in claim 19 wherein said loop component is capable of being elastically stretched in at least one of the directions at least about 2.5 times a relaxed length of the loop component.

EVIDENCE APPENDIX

None.

RELATED PROCEEDINGS APPENDIX

None.